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Montana

Basin Outlook Report

June 1, 1995



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Basin Outlook Reports

and Federal - State - Private Cooperative Snow Surveys

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How forecasts are made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Natural Resources Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

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Bozeman, Montana

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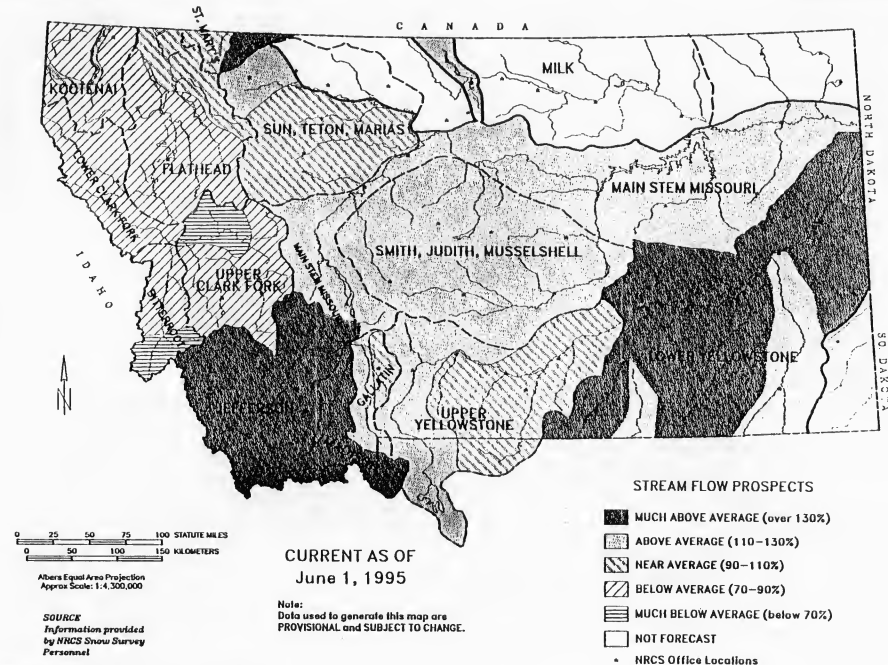
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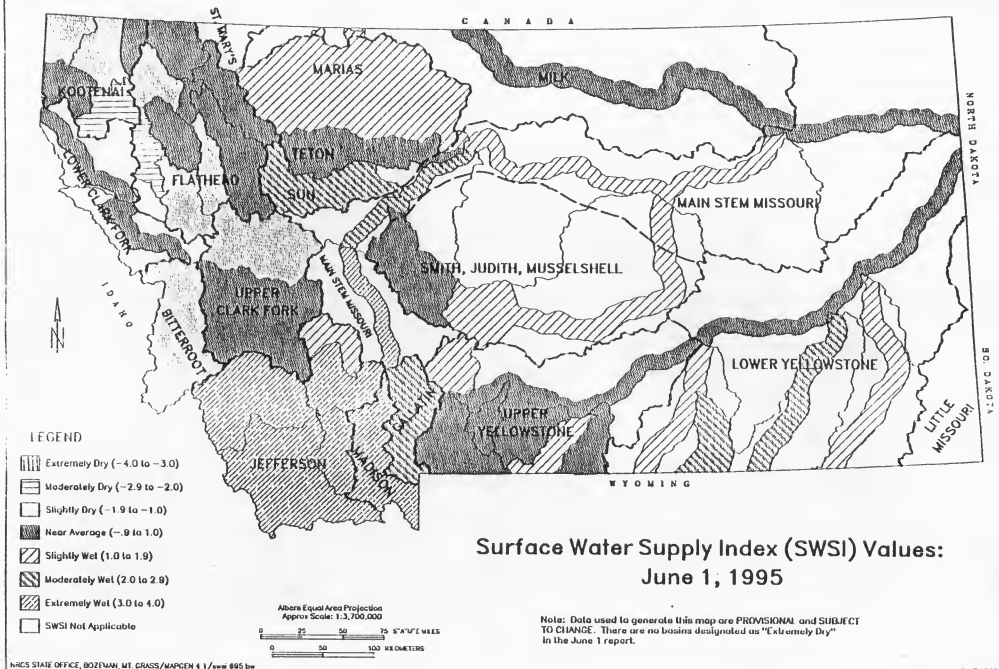
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BASIN SUMMARY OF
SNOW COURSE DATA

JUNE 1995

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
BADGER PASS PILLOW	6900	6/01/95	---	27.8	10.5	20.9
BANFIELD MTN PILLOW	5600	6/01/95	---	.0	.0	2.9
BARKER LAKES PILLOW	8250	6/01/95	---	18.1	.0	10.0
BASIN CREEK PILLOW	7180	6/01/95	---	12.9	.0	4.7
BEAGLE SPGS PILLOW	8850	6/01/95	---	10.5	.0	.9
BEAVER CREEK PILLOW	7850	6/01/95	---	16.9	.0	9.7
BIG CREEK	6750	5/30/95	88	44.4	16.6	42.1
BISSON CREEK PILLOW	4920	6/01/95	---	.0	.0	.0
BISSON CREEK	4920	5/31/95	0	.0	.0	.0
BLACK BEAR PILLOW	7950	6/01/95	---	48.0	6.7	27.5
BLACK PINE PILLOW	7100	6/01/95	---	.0	.0	2.4
BLOODY DICK PILLOW	7550	6/01/95	---	3.5	.0	1.7
BOULDER MTN PILLOW	7950	6/01/95	---	18.7	.0	10.5
BOX CANYON PILLOW	6700	6/01/95	---	.0	.0	.0
BOXELDER CREEK	5100	5/27/95	0	.0	.0	.0
BRIDGER BOWL PILLOW	7250	5/31/95	---	19.7	.0	15.6
BRIDGER BOWL	7250	2/31/95	46	22.0	.0	18.9
CALVERT CR PILLOW	6430	6/01/95	---	.0	.0	.0
CARROT BASIN PILLOW	9000	6/01/95	---	38.1	6.6	24.7
CHICKEN CREEK	4060	5/30/95	0	.0	.0	.0
CLOVER MDW PILLOW	8800	6/01/95	---	22.7	.0	10.6
COLE CREEK PILLOW	7850	6/01/95	---	31.0	.0	12.9
COMBINATION PILLOW	5600	6/01/95	---	.0	.0	.0
COPPER BOTTOM PILLOW	5200	6/01/95	---	.0	.0	.0
COPPER CAMP PILLOW	6950	6/01/95	---	8.3	.0	12.7
CRYSTAL LAKE PILLOW	6050	6/01/95	---	.0	.0	1.0
DALY CREEK PILLOW	5780	6/01/95	---	.0	.0	.0
DARKHORSE LK. PILLOW	8700	6/01/95	---	37.6	11.6	28.5
DEADMAN CR PILLOW	6450	6/01/95	---	.0	.0	.0
DISCOVERY BASIN	7050	5/31/95	7	2.6	.0	4.8
DIVIDE PILLOW	7800	6/01/95	---	8.2	.0	1.7
DUPUYER CREEK PILLOW	5750	6/01/95	---	.0	.0	.0
EMERY CREEK PILLOW	4350	6/01/95	---	.0	.0	.0
FISHER CREEK PILLOW	9100	6/01/95	---	31.7	1.8	31.7
FLATTOP MTN PILLOW	6300	6/01/95	---	39.2	23.0	34.4
FROHNER MDWS PILLOW	6480	6/01/95	---	.0	.0	1.2
GRAVE CRK PILLOW	4300	6/01/95	---	.0	.0	.0
HAND CREEK PILLOW	5030	6/01/95	---	.0	.0	.0
HAWKINS LAKE PILLOW	6450	6/01/95	---	11.9	1.2	19.5
HELL ROARING DIVIDE	5770	5/31/95	19	10.2	.0	11.2
HERRIG JUNCTION	4850	5/30/95	0	.0	.0	--
HOODOO BASIN PILLOW	6050	6/01/95	---	23.3	7.7	29.2
HOODOO BASIN	6050	6/01/95	---	24.6E	8.8	32.9
HOODOO CREEK	5900	6/01/95	---	16.9E	3.6	31.9
KIWANIS CAMP	3720	5/27/95	0	.0	.0	--
KRAFT CREEK PILLOW	4750	6/01/95	---	.0	.0	.0
LAKEVIEW RDG. PILLOW	7400	6/01/95	---	.0	.0	.0

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
LEMHI RIDGE PILLOW	8100	6/01/95	---	8.3	.0	2.8
LICK CREEK PILLOW	6860	6/01/95	---	.0	.0	.6
LOWER TWIN PILLOW	7900	6/01/95	---	30.4	.0	13.5
LUBRECHT PILLOW	4680	6/01/95	---	.0	.0	.0
MADISON PLT PILLOW	7750	6/01/95	---	22.1	.0	7.5
MANY GLACIER PILLOW	4900	6/01/95	---	.0	--	.0
MAYNARD CR PILLOW	6210	5/31/95	---	3.1	.0	2.7
MAYNARD CREEK	6210	5/31/95	1	.3	.0	3.2
MONUMENT PK PILLOW	8850	6/01/95	---	20.5	3.1	16.2
MOSS PEAK PILLOW	6780	6/01/95	---	35.1	11.9	30.1
MT LOCKHART PILLOW	6400	6/01/95	---	9.5	.1	10.5
MULE CREEK PILLOW	8300	6/01/95	---	14.4	.0	9.0
NEVADA CREEK PILLOW	6480	6/01/95	---	2.3	.0	3.8
NEZ PERCE CMP PILLOW	5650	6/01/95	---	.0	.0	.2
NOISY BASIN PILLOW	6040	6/01/95	---	25.3	4.5	30.2
N.F. ELK CR PILLOW	6250	6/01/95	---	.0	.0	.9
NF JOCKO PILLOW	6330	6/01/95	---	13.0	5.1	30.7
NORTH FORK JOCKO	6330	5/30/95	26	14.0	3.2	26.3
N.E. ENTRANCE PILLOW	7350	6/01/95	---	.0	.0	.2
OPHIR PARK	7150	5/27/95	18	6.9	--	7.6
PETERSON MDW PILLOW	7200	5/31/95	---	5.4	.0	2.7
PETERSON MEADOWS	7200	5/31/95	17	6.2	.0	1.2
PICKFOOT CRK PILLOW	6650	6/01/95	---	.0	.0	.0
PIKE CREEK PILLOW	5930	6/01/95	---	.6	.0	7.9
PLACER BASIN PILLOW	8830	6/01/95	---	22.3	.7	16.2
PORCUPINE PILLOW	6500	6/01/95	---	.0	.0	.0
RED MOUNTAIN	6000	5/26/95	8	3.4	.0	4.2
REVAIS CREEK	4800	5/31/95	0	.0	.0	.0
ROCKER PEAK PILLOW	8000	6/01/95	---	17.5	2.2	13.2
ROCKY BOY PILLOW	4700	5/27/95	---	.0	.0	.0
ROCKY BOY	4700	5/27/95	0	.0	.0	.3
SADDLE MTN PILLOW	7900	6/01/95	---	16.5	.5	17.5
SHORT CREEK PILLOW	7000	6/01/95	---	.0	.0	.0
SHOWER FALLS PILLOW	8100	6/01/95	---	26.9	.8	23.3
SILVER RUN PILLOW	6630	6/01/95	---	.0	.0	.0
SKALKAHO PILLOW	7260	6/01/95	---	12.9	.0	15.8
S.F. SHIELDS PILLOW	8100	6/01/95	---	21.4	.0	13.3
SPUR PARK PILLOW	8100	6/01/95	---	18.8	.9	14.8
SQUAW PEAK	6150	5/31/95	0	.0	.0	5.2
STAHL PEAK PILLOW	6030	6/01/95	---	27.8	10.1	27.3
STRYKER BASIN	6180	5/30/95	47	25.3	4.3	20.6
STUART MOUNTAIN	7400	5/30/95	31	14.6	.0	--
SUCKER CREEK	3960	5/27/95	0	.0	.0	.2
TAYLOR ROAD	4080	5/27/95	0	.0	.0	.4
TEPEE CREEK PILLOW	8000	6/01/95	---	16.5	.0	5.3
TIZER BASIN PILLOW	6840	6/01/95	---	1.7	.0	2.0
TV MOUNTAIN	6800	5/30/95	4	1.4	.0	--
TWELVEMILE PILLOW	5600	6/01/95	---	.0	.0	.6
TWENTY-ONE MILE	7150	6/03/95	8	1.0	--	--
WALDRON PILLOW	5600	6/01/95	---	.0	.0	.0
WARM SPRINGS PILLOW	7800	6/01/95	---	17.8	6.0	19.6
WHISKEY CREEK PILLOW	6800	6/01/95	---	6.5	.0	1.2
WHITE MILL PILLOW	8700	6/01/95	---	22.0	1.6	19.4
WOOD CREEK PILLOW	5960	6/01/95	---	.6	.0	.1

MONTANA Water Supply Outlook Report as of June 1, 1995

Water supply conditions were quite varied across the state with areas of flooding in central, southcentral and southwest having areas of flooding, generally prior to peak snowmelt. May weather remained cold and temperatures were below average. Many areas were still accumulating snow through the middle of May.

SNOWPACK

As of June 1, mountain snow water content across Montana were 19 percent above average and 688 percent above last year. Significant snow water was added to many mountain areas east of the divide and in particular the southwest region. Several basins along the southern mountains of Montana and northern mountains of Idaho and Wyoming have record breaking snow water contents for June 1. Below average temperatures, ones normally occurring in April, prolonged the snowmelt.

Snow water content was at record highs in several basins with the Upper Madison being the highest at 112 percent above average. The Upper Madison set new record high snow water contents each month except March 1.

West of the Continental Divide, snowpacks were 16 percent below average and 320 percent above last year. East of the Continental Divide, snowpacks were 80 percent above average and 1621 percent above last year.

RIVER BASIN	% OF AVERAGE	% OF LAST YEAR
COLUMBIA	84	420
KOOTENAI	73	608
FLATHEAD	96	289
UPPER CLARK FORK	93	839
BITTERROOT	70	8340
LOWER CLARK FORK	53	356
MISSOURI	164	1294
MISSOURI HEADWATERS	180	1541
JEFFERSON	189	1610
MADISON	195	1656
GALLATIN	132	1665
MISSOURI MAINSTEM	112	712
HEADWATERS MAINSTEM	131	1827
SMITH-JUDITH-MUSSELSHELL	143	4167
SUN-TETON-MARIAS	98	363
MILK	0	0
ST.MARY	114	170
YELLOWSTONE	186	2356
UPPER YELLOWSTONE	136	1548
LOWER YELLOWSTONE (WYOMING)	242	2849
WIND	262	5764
SHOSHONE	166	1411
BIGHORN	212	1907
TONGUE	300	3000
POWDER	403	4030

PRECIPITATION

May mountain precipitation across Montana was 14 percent above average and 7 percent above last year and water year mountain precipitation was 7 percent above average and 30 percent above last year.

West of the Continental Divide, mountain precipitation during May was 21 percent below average and 5 percent below last year. East of the Continental Divide was 23 percent above average and 11 percent above last year. Water year precipitation west of the Continental Divide was 13 percent above average and 42 percent above last year and east of the Continental Divide was 23 percent above average and 11 percent above last year. Water year precipitation west of the Continental Divide was 13 percent above average and 42 percent above last year and east of the Continental Divide was 11 percent above average and 38 percent above last year.

RIVER BASIN	MAY % OF AVERAGE	WATER YEAR % OF AVERAGE
COLUMBIA	79	97
KOOTENAI	52	89
FLATHEAD	74	96
UPPER CLARK FORK	93	96
BITTERROOT	89	99
LOWER CLARK FORK	54	93
MISSOURI	115	113
JEFFERSON	121	125
MADISON	105	128
GALLATIN	86	109
MISSOURI MAINSTEM	102	100
SMITH-JUDITH-MUSSELSHELL	112	101
SUN-TETON-MARIAS	170	104
Milk	55	85
ST. MARY	124	100
YELLOWSTONE	130	119
UPPER YELLOWSTONE	81	109
LOWER YELLOWSTONE	138	117
WIND	209	130
SHOSHONE	97	123
BIGHORN	142	128
TONGUE	221	136
POWDER	189	145

RESERVOIRS

Major reservoir storage across the state was 2 percent below average and 12 percent below last year.

West of the Continental Divide, reservoirs were 8 percent above average and the same as last year. East of the Continental Divide, reservoirs were 5 percent above average and 23 percent below last year.

RESERVOIRS (continued)

RIVER BASIN	% OF AVERAGE	% OF LAST YEAR
COLUMBIA	108	100
KOOTENAI	106	85
FLATHEAD	95	112
UPPER CLARK FORK	104	95
BITTERROOT	120	107
LOWER CLARK FORK	113	100
MISSOURI	98	83
JEFFERSON	103	103
MADISON	84	74
GALLATIN	107	74
MISSOURI MAINSTEM	92	90
SMITH-JUDITH-MUSSELSHELL	119	95
SUN-TETON-MARIAS	117	93
MILK	86	72
ST. MARY	120	64
YELLOWSTONE	96	84
UPPER YELLOWSTONE	99	77
LOWER YELLOWSTONE	93	92

STREAMFLOW

SEASONAL STREAMFLOW FORECASTS

Seasonal volume streamflow forecasts across Montana are 4 percent above average and 103 percent above last years forecasts.

West of the Continental Divide, streamflows are forecast to be 20 percent below average and 72 percent above last years forecasts. East of the Continental Divide, streamflows are forecast to be 12 percent above average and 114 percent above last years forecasts.

RIVER BASIN	JUNE-JULY FORECASTS % OF AVERAGE	JUNE-JULY FORECASTS % OF LAST YEAR
COLUMBIA	80	172
KOOTENAI	91	135
FLATHEAD	84	134
UPPER CLARK FORK	76	160
BITTERROOT	74	272
LOWER CLARK FORK	76	161
MISSOURI	123	259
JEFFERSON	155	538
MADISON	139	259
GALLATIN	125	233
MISSOURI MAINSTEM	128	245
SMITH-JUDITH-MUSSELSHELL	111	155
SUN-TETON-MARIAS	112	152
MILK	132	488
ST. MARY	109	132

SEASONAL STREAMFLOW FORECASTS (continued)

YELLOWSTONE	124	250
UPPER YELLOWSTONE	112	237
LOWER YELLOWSTONE	136	262

NOTE: The FORECAST AS % OF LAST YEAR column above, is this years forecast as a percent of last years forecast, not of what actually occurred.

PEAK STREAMFLOW FORECASTS

Peak streamflows west of the Continental Divide occurred during the third and fourth weeks of May and were well below average.

Peak snowmelt streamflows east of the Continental Divide had peaked in most areas except in the central, southwest, southcentral, and southeast regions. With near to record snowpacks flooding could occur during peak snowmelt runoff. If rain occurs during snowmelt peak, flooding in many areas of southwest and southcentral Montana will occur.

	OBSERVED PEAK FLOW (CFS)	DATE OF PEAK	PERCENT OF AVERAGE
COLUMBIA RIVER DRAINAGE			
Fisher near Libby	1,330	5/18	54
Yaak near Troy	4,040	5/17	67
Blackfoot near Bonner	4,760	5/21	52
Clark Fork above Missoula	7,983	5/21	51
Bitterroot near Darby	2,770	5/26	47
Clark Fork at St. Regis	18,300	5/23	48
North Fork Flathead near Columbia Falls	12,200	5/19	60
Middle Fork Flathead near West Glacier	11,400	5/18	52
	FORECAST PEAK DAILY FLOWS (CFS)	% OF AVERAGE	FORECAST PEAK DATES
MISSOURI RIVER DRAINAGE			
Big Hole near Melrose	6,700 to 9,700	91 to 131	5/30 to 6/09
Ruby above Ruby Reservoir ..	1,300 to 1,800	131 to 182	6/06 to 6/15
Gallatin near Gateway	5,350 to 6,700	103 to 129	6/09 to 6/17
Gallatin near Logan	5,200 to 7,100	98 to 134	6/10 to 6/18
Missouri at Toston	21,250 to 29,250	119 to 164	6/11 to 6/15
YELLOWSTONE RIVER DRAINAGE			
Yellowstone at Corwin Springs	15,000 to 20,750	90 to 123	6/15 to 6/18
Yellowstone at Livingston .	17,500 to 23,500	88 to 119	6/15 to 6/18
Boulder near Big Timber ...	4,400 to 6,400	87 to 127	6/15 to 6/18
Stillwater near Absarokee .	5,500 to 8,300	87 to 132	6/15 to 6/19

PEAK STREAMFLOW FORECASTS (continued)

Clarks Fork near Belfry ...	6,500 to 9,200	87 to 123	6/15 to 6/18
Yellowstone at Billings ...	35,000 to 49,500	86 to 121	6/16 to 6/19

NOTE: The low number in the flow range represents the maximum daily flow that would be expected to occur with little rainfall during the peak snowmelt periods. The high number in the flow range could be expected with moderate amounts of rain about the same time as maximum snowmelt runoff is occurring.

SURFACE WATER SUPPLY INDEX

The Surface Water Supply Index (SWSI) is an indicator of surface water supply conditions for the spring and summer months. Water users that rely on mountain precipitation can use the index to evaluate seasonal surface water supplies. The SWSI accounts for mountain snowpack, mountain precipitation, streamflow, reservoir storage, and soil moisture.

SWSI RATING	SURFACE WATER CONDITION
+3.0 to +4.0	Extremely Wet
+2.0 to +2.9	Moderately Wet
+1.0 to +1.9	Slightly Wet
-1.0 to +1.0	Near Average
-1.0 to -2.0	Slightly Dry
-2.0 to -3.0	Moderately Dry
-3.0 to -4.0	Extremely Dry

SWSI

Basin

-0.5	Kootenai River at Ft. Steele (Kootenai in Canada)
-0.9	Tobacco River
-1.7	Kootenai Ft. Steele to Libby Dam
-0.3	Kootenai River below Libby Dam
-2.4	Fisher River
-1.9	Yaak River
-0.8	North Fork Flathead River
+0.4	Middle FORK Flathead River
-0.2	South Fork Flathead River
-0.2	Flathead River at Columbia Falls
-1.1	Stillwater/Whitefish Rivers
-1.7	Swan River
-0.5	Flathead River at Polson
-1.8	Mission Valley
-2.8	Little Bitterroot River
+0.8	Clark Fork River above Rock Creek
-1.3	Blackfoot River
-0.4	Clark Fork River above Missoula
-1.3	Bitterroot River
-0.6	Clark Fork River below Bitterroot River
-0.5	Clark Fork River below Flathead River
+3.4	Beaverhead River
+3.5	Ruby River
+3.0	Big Hole River

SURFACE WATER SUPPLY INDEX (continued)

SWSI	Basin
+1.6	Boulder River (Jefferson)
+3.0	Jefferson River
+3.4	Madison River
+2.4	Gallatin River
+3.0	Missouri River above Canyon Ferry
+2.4	Missouri River below Canyon Ferry
+0.0	Smith River
+2.0	Sun River
+0.2	Teton River
+0.9	Birch/Dupuyer Creeks
+1.3	Mariás River
+1.9	Musselshell River
+1.5	Missouri River above Ft. Peck
+0.6	Missouri River below Ft. Peck
-0.8	Milk River
+0.5	Yellowstone River above Livingston
+1.2	Shields River
+0.0	Boulder River (Yellowstone)
+0.7	Stillwater River
+1.8	Rock/Red Lodge Creeks
+0.9	Clarks Fork River
+0.4	Yellowstone River above Bighorn River
+1.3	Bighorn River below Bighorn Lake
+2.1	Little Bighorn River
+0.9	Yellowstone River below Bighorn River
+2.5	Tongue River
+1.8	Powder River

Snowpack conditions in the Kootenai River Basin in Montana were below average and in the Kootenai River Basin in British Columbia, Canada, were average. Snow water content in Montana was 27 percent below average and 508 percent above last year and in British Columbia, Canada, at average and 132 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Percent of Average
KOOTENAI MAINSTEM	3	0	61
TOBACCO	2	275	102
FISHER	1	0	0
YAAK	2	1275	65
KOOTENAI ab BONNERS FERRY	13	403	66
KOOTENAI in MONTANA	7	608	73

Mountain precipitation during May was 48 percent below average and 38 percent below last year. Water year precipitation, beginning October 1, 1994, was 5 percent below average and 97 percent above last year.

Lake Koocanusa storage, on the last day of May, was 6 percent above average and 15 percent below last year.

Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	***** Usable Storage Last Year	***** Average
LAKE KOOCANUSA	5748.0	3375.0	3989.0	3186.0

Seasonal streamflows, for the period June through July, are forecast to be 9 percent below average and 35 percent above last years forecasts.

The Fisher River near Libby reached the snowmelt peak flow on May 18 at 1,330 cfs or 2,612 acre-feet and was 46 percent below average; the Yaak River near Troy reached the snowmelt peak on May 17 at 4,040 cfs or 7,935 acre-feet and was 33 percent below average.

Streamflow Forecasts

Forecast Pt Forecast Period	<— Drier — Future Conditions — Wetter —>					30 Yr Avg (1000AF)	
	Chance of Exceeding * _____						
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
TOBACCO nr Eureka							
JUN-JUL	41.7	49.6	55.0	89	60.4	68.3	62.0
JUN-SEP	53.1	62.0	68.0	89	74.0	82.9	76.0

Streamflow Forecasts

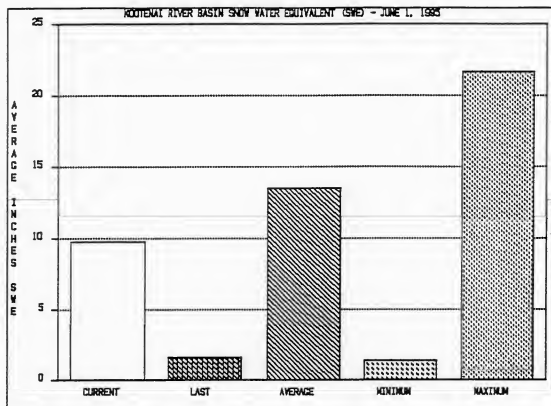
Forecast Pt Forecast Period	<— Drier — Future Conditions — Wetter —>					30 Yr Avg (1000AF)	
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
KOOTENAI b1 Libby Dam (1,2)							
JUN-JUL	2414	3023	3300	91	3577	4186	3633
JUN-SEP	3108	3831	4160	90	4489	5212	4626
FISHER nr Libby							
JUN-JUL	33.8	46.4	55.0	79	63.6	76.2	70.0
JUN-SEP	91.5	78.1	69.0	80	59.9	46.5	86.0
YAAK near Troy							
JUN-JUL	71.5	102	122	81	142	173	151
JUN-SEP	91.7	123	144	83	165	196	174
KOOTENAI at Leonia (1,2)							
JUN-JUL	2596	3341	3680	92	4019	4764	4010
JUN-SEP	3314	4185	4580	90	4975	5846	5091

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

Surface Water Supply Index (SWSI) was -0.5 for the Kootenai River at Ft. Steele (Kootenai in Canada); -0.9 for the Tobacco River; -1.7 for the Kootenai Ft. Steele to Libby Dam; -0.3 for the Kootenai River below Libby Dam; -2.4 for the Fisher River; and -1.9 for the Yaak River.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1969-1995, OCCURRED IN WATER YEAR 1993.

MAXIMUM SNOW WATER EQUIVALENT, 1969-1995, OCCURRED IN WATER YEAR 1974.

FLATHEAD RIVER BASIN as of June 1, 1995

Snowpack conditions for the Flathead River Basin in Montana were slightly below and in the North Fork of Canada were well above average. Snow water content in Montana was 4 percent below average and 159 percent above last year and in Canada was 83 percent above average and 407 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
NORTH FORK in CANADA	1	0	153
NORTH FORK in MONTANA	4	233	106
MIDDLE FORK	4	202	107
SOUTH FORK	2	562	.84
STILLWATER-WHITEFISH	4	826	112
SWAN	5	309	89
MISSION VALLEY	3	279	110
LITTLE BITTERROOT-ASHLEY	0	0	0
JOCKO	3	255	36
FLATHEAD in MONTANA	18	289	96
FLATHEAD RIVER BASIN	19	308	98

Mountain precipitation during May was 26 percent below average and 6 percent below last year. Water year precipitation, beginning October 1, 1994, was 4 percent below average and 27 percent above last year.

Reservoir storage, on the last day of May, was 5 percent below average and 12 percent above last year. Combined Camas reservoir storage was 34 percent below average and 10 percent below last year; the combined Mission Valley reservoir storage was 35 percent below average and 42 percent below last year; Hungry Horse storage was 5 percent below average and 37 percent above last year; and Flathead Lake storage was 4 percent below average and 13 percent below last year.

Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	Usable Storage Last Year	***** Average
CAMAS (4)	45.2	20.6	22.9	31.1
MISSION VALLEY (8)	100.0	45.1	77.2	68.9
HUNGRY HORSE	3451.0	2529.0	1847.0	2659.0
FLATHEAD LAKE	1791.0	1418.0	1622.0	1480.0

Seasonal streamflow, for the period June through July, are forecast to be 16 percent below average and 34 percent above last years forecasts.

Provisional USGS streamflow data indicates the snowmelt peak flow for the North Fork Flathead River near Columbia Falls occurred on 5/19 at 12,200 cfs or 23,961 acre-feet and 40 percent below average and the Middle Fork Flathead River near West Glacier occurred on 5/18 at 11,400 cfs or 22,390 acre-feet and 48 percent below average.

Streamflow Forecasts

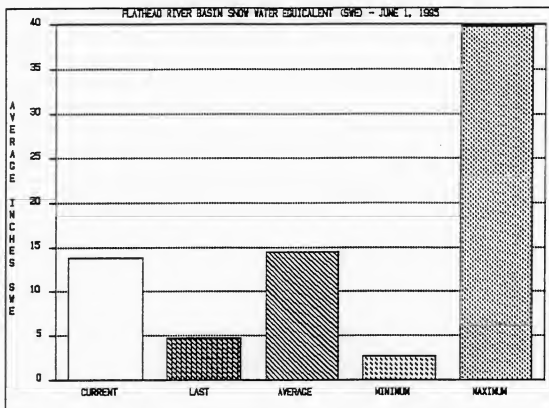
Forecast Pt Forecast Period	← Drier — Future Conditions — Wetter →						30 Yr Avg (1000AF)
	Chance of Exceeding *						
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
NF FLATHEAD nr Columbia Falls							
JUN-JUL	665	735	783	90	830	900	872
JUN-SEP	820	900	955	91	1010	1090	1046
MF FLATHEAD nr West Glacier							
JUN-JUL	680	745	786	90	830	890	877
JUN-SEP	805	875	923	90	970	1040	1027
SF FLATHEAD nr Columbia Fls (1,2)							
JUN-JUL	580	715	773	76	835	965	1019
JUN-SEP	680	815	878	76	940	1080	1153
FLATHEAD at Columbia Falls (2)							
JUN-JUL	2110	2270	2378	84	2490	2650	2840
JUN-SEP	2470	2680	2813	85	2950	3150	3317
STILLWATER nr Whitefish							
JUN-JUL	60	68	73	89	78	86	82
JUN-SEP	78	86	92	91	98	106	101
WHITEFISH nr Kalispell							
JUN-JUL	44	47	49	84	51	54	58
JUN-SEP	55	58	61	86	64	67	71
SWAN nr Bigfork							
JUN-JUL	220	245	262	82	280	305	321
JUN-SEP	285	315	333	82	355	380	404
FLATHEAD nr Polson (1,2)							
JUN-JUL	2280	2600	2752	83	2900	3230	3315
JUN-SEP	2610	3030	3218	84	3410	3830	3850

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

Surface Water Supply Index (SWSI) was -0.8 for the North Fork Flathead River; +0.4 for the Middle Fork Flathead River; -0.2 for the South Fork Flathead River; -0.2 for the Flathead River at Columbia Falls; -1.1 for the Stillwater/Whitefish Rivers; -1.7 for the Swan River; -0.5 for the Flathead River at Polson; -1.8 for the Mission Valley; and -2.8 for the Little Bitterroot River.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1961-1995, OCCURRED IN WATER YEAR 1992.

MAXIMUM SNOW WATER EQUIVALENT, 1961-1995, OCCURRED IN WATER YEAR 1972.

Snowpack conditions in the Upper Clark Fork River Basin were slightly below average. Snow water content was 7 percent below average and 739 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Percent of Average
CLARK FORK ab FLINT CREEK	5	837	134
FLINT CREEK	4	0	105
ROCK CREEK	2	0	112
CLARK FORK ab BLACKFOOT	9	1213	117
BLACKFOOT	6	463	49
UPPER CLARK FORK BASIN	15	839	93

Mountain precipitation during May was 6 percent below average and 21 percent above last year. Valley precipitation during May was 12 percent below average and 31 percent below last year. Water year precipitation, beginning October 1, 1994, was 4 percent below average and 26 percent above last year.

Reservoir storage, on the last day of May, was 4 percent above average and 5 percent below last year. Georgetown Lake storage was 7 percent above average and 3 percent below last year; Lower Willow Creek was 16 percent above average and the same as last year; and Nevada Creek storage was 9 percent below average and 13 percent below last year.

Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	***** Usable Storage Last Year	***** Average
GEORGETOWN LAKE	31.0	29.0	30.0	27.0
LOWER WILLOW CREEK	4.9	5.1	5.1	4.4
NEVADA CREEK	12.6	10.4	11.9	11.4

Seasonal streamflows, for the period June through July, are forecast to be 24 percent below average and 60 percent above last years forecasts.

Provisional USGS streamflow data indicates the snowmelt peak flow for the Blackfoot near Bonner occurred on 5/21 at 4,760 cfs or 9,349 acre-feet and 48 percent below average and the Clark Fork above Missoula occurred on May 21 at 7,983 cfs or 15,857 acre-feet and 49 percent below average.

Streamflow Forecasts

Forecast Pt Forecast Period	← Drier — Future Conditions — Wetter →					30 Yr Avg (1000AF)	
	Chance of Exceeding *						
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
MOULTON RES inflow (million gal.)							
JUN-JUN	30	47	58	97	70	87	60
JUN-JUL	40	63	79	96	95	118	82
WARM SPRINGS CK at Anaconda (2)							
JUN-JUL	15.0	20	23	88	26	31	26
JUN-SEP	22	28	32	91	36	42	35
LITTLE BLACKFOOT nr Garrison							
JUN-JUL	8.0	19.0	26	76	33	44	34
JUN-SEP	12.0	24	32	78	40	52	41
FLINT CK nr Southern Cross (2)							
JUN-JUL	2.7	4.6	5.9	74	7.2	9.1	8.0
JUN-SEP	3.3	6.0	7.8	74	9.6	12.3	10.6
FLINT CK b1 Boulder Ck							
JUN-JUL	16.0	23	27	79	32	38	34
JUN-SEP	25	34	40	80	46	55	50
LOWER WILLOW CK RES inflow							
JUN-JUL	0.8	1.9	2.6	57	3.3	4.4	4.6
JUN-SEP	1.3	2.5	3.3	60	4.1	5.3	5.5
MF ROCK CK nr Philipsburg							
JUN-JUL	24	29	33	79	37	42	42
JUN-SEP	29	35	39	80	43	50	49
ROCK CK nr Clinton							
JUN-JUL	99	121	136	82	151	173	165
JUN-SEP	130	155	172	85	189	215	202
NEVADA CK nr Finn							
JUN-JUL	2.2	4.5	6.1	81	7.7	10.0	7.5
JUN-SEP	3.4	6.0	7.7	84	9.4	12.0	9.2
CLEARWATER nr Clearwater							
JUN-JUL	29	40	48	74	56	67	65
JUN-SEP	38	49	56	76	63	74	74
BLACKFOOT nr Bonner							
JUN-JUL	165	235	281	68	330	395	414
JUN-SEP	235	310	361	71	410	490	505
CLARK FORK ab Milltown							
JUN-JUL	178	240	283	83	325	390	339
JUN-SEP	255	330	378	86	430	505	442

Streamflow Forecasts

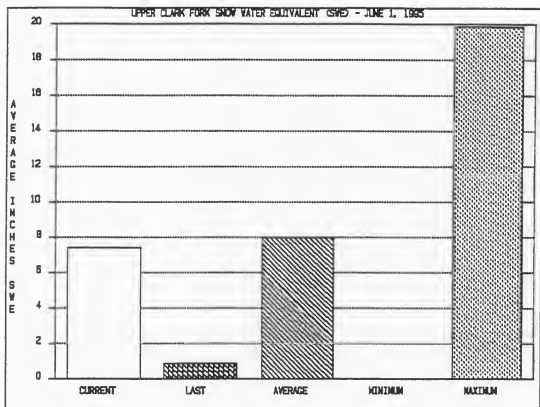
	<— Drier — Future Conditions — Wetter —>					
Forecast Pt	Chance of Exceeding *					
Forecast	90%	70%	50% (Most Prob)	30%	10%	30 Yr Avg
Period	(1000AF)	(1000AF)	(1000AF) (% AVG.)	(1000AF)	(1000AF)	(1000AF)
<hr/>						
CLARK FORK ab Missoula						
JUN-JUL	395	495	564	75	630	735
JUN-SEP	545	660	739	78	815	930
						753
						947

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

Surface Water Supply Index (SWSI) was +0.8 for the Clark Fork River above Rock Creek; -1.3 for the Blackfoot River; and -0.4 for the Clark Fork River above Missoula.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1970-1995, OCCURRED IN WATER YEAR 1987.

MAXIMUM SNOW WATER EQUIVALENT, 1970-1995, OCCURRED IN WATER YEAR 1972.

Streamflow Forecasts

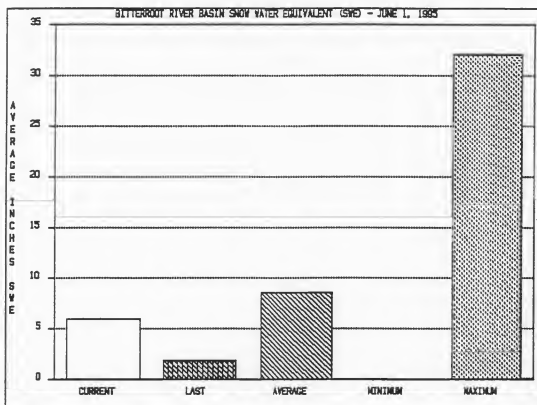
Forecast Pt Forecast Period	← Drier — Future Conditions — Wetter →					30 Yr Avg (1000AF)
	Chance of Exceeding *					
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)	
BITTERROOT nr Darby						
JUN-JUL	148	187	213	81	240	262
JUN-SEP	192	235	262	84	290	311
ROCK CK nr Darby (2)						
JUN-JUL	24	30	34	79	38	43
JUN-SEP	28	34	38	81	42	47
SKALKAHO CK nr Hamilton						
JUN-JUL	14.0	17.0	19.0	65	21	29
JUN-SEP	19.0	23	25	69	27	36
BURNT FORK CK nr Stevensville (2)						
JUN-JUL	8.7	11.6	13.5	74	15.4	18.2
JUN-SEP	12.0	15.0	18.0	77	20	23
BITTERROOT at Missoula						
JUN-JUL	415	490	536	73	585	736
JUN-SEP	475	555	611	72	665	853

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

Surface Water Supply Index (SWSI) was -1.3 for the Bitterroot River.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1965-1995, OCCURRED IN WATER YEAR 1992.

MAXIMUM SNOW WATER EQUIVALENT, 1965-1995, OCCURRED IN WATER YEAR 1974.

LOWER CLARK FORK RIVER BASIN as of June 1, 1995

Snowpack conditions in the Lower Clark Fork River Basin were well below average. Snow water content was 47 percent below average and 256 percent above last year.

Mountain precipitation during May, was 48 percent below average and 28 percent below last year. Valley precipitation during May was 38 percent below average and 29 percent below last year. Water year precipitation, beginning October 1, 1994, was 7 percent below average and 30 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
LOWER CLARK FORK	6	356	53

Noxon Rapids storage, on the last day of May, was 13 percent above average and the same as last year.

Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	Usable Storage Last Year	***** Average
NOXON RAPIDS	335.0	315.3	316.1	279.6

Seasonal streamflows, for the period June through July, are forecast to be 24 percent below average and 61 percent above last year.

Provisional USGS streamflow data indicates the snowmelt peak flow for the Clark Fork at St. Regis occurred on 5/23 at 18,300 cfs or 35,941 acre-feet and 52 percent below average.

Streamflow Forecasts

Forecast Pt Forecast Period	← Drier — Future Conditions — Wetter →					30 Yr Avg (1000AF)	
	Chance of Exceeding *						
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
CLARK FORK ab Missoula							
JUN-JUL	395	495	564	75	630	735	753
JUN-SEP	545	660	739	78	815	930	947
CLARK FORK bl Missoula							
JUN-JUL	845	995	1100	74	1200	1360	1490
JUN-SEP	1060	1230	1350	75	1470	1640	1801

Streamflow Forecasts

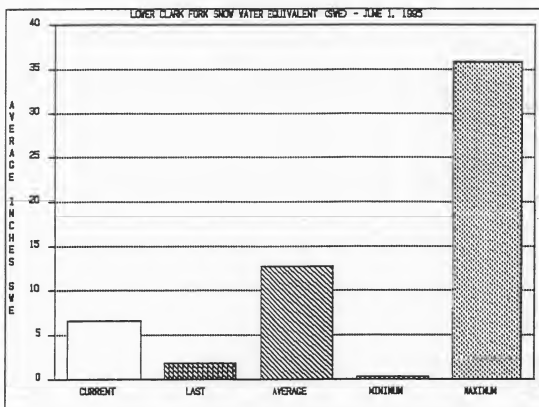
	← Drier — Future Conditions — Wetter →					
Forecast Pt Forecast Period	Chance of Exceeding *					30 Yr Avg (1000AF)
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)	
CLARK FORK at St. Regis (1)						
JUN-JUL	830	1230	1410	74	1590	1990
JUN-SEP						1903
CLARK FORK nr Plains (1,2)						
JUN-JUL	2380	3780	4190	77	4600	5510
JUN-SEP						5457
THOMPSON RIVER nr Thompson Falls						
JUN-JUL	39	53	62	70	71	85
JUN-SEP	59	75	85	73	96	111
PROSPECT CREEK at Thompson Falls						
JUN-JUL	21	29	34	77	39	47
JUN-SEP						44
CLARK FORK at Whitehorse Rpds (1,2)						
JUN-JUL	3050	4080	4550	76	5020	6050
JUN-SEP						5984

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

Surface Water Supply Index (SWSI) was -0.6 for the Clark Fork River below Bitterroot River and -0.5 for the Clark Fork River below Flathead River.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1966-1995, OCCURRED IN WATER YEAR 1977.

MAXIMUM SNOW WATER EQUIVALENT, 1966-1995, OCCURRED IN WATER YEAR 1974.

JEFFERSON RIVER BASIN as of June 1, 1995

Snowpack conditions in the Jefferson River Basin were well above average. Snow water content was 89 percent above average and 1510 percent above last year. Snow water content has set a new record in the Beaverhead, Big Hole and Ruby basins for June 1.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Average
BEAVERHEAD	8	966	221
RUBY	4	0	238
BIGHOLE	8	851	144
BOULDER	3	1382	159
JEFFERSON RIVER BASIN	18	1610	189

Mountain precipitation during May, was 19 percent above average and 52 percent above last year. Valley precipitation during May was 46 percent above average and 57 percent above last year. Water year precipitation, beginning October 1, 1994, was 25 percent above average and 69 percent above last year.

Reservoir storage, on the last day of May, was 3 percent above average and 3 percent above last year. Lima storage was 1 percent above average and 11 percent below last year; Clark Canyon storage was 4 percent above average and 8 percent above last year; and Ruby River storage was 1 percent above average and 12 percent above last year.

Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	Usable Storage Last Year	***** Average
LIMA	84.0	64.7	72.9	64.2
CLARK CANYON	255.6	172.0	160.0	165.3
RUBY RIVER	38.8	38.4	34.2	37.9

Seasonal streamflows, for the period June through July, are forecast to be 55 percent above average and 438 percent above last years forecasts.

Considerable flooding has occurred during the first week of June and more could occur with additional rain or above average temperatures.

The snowmelt peak flow for the Big Hole River near Melrose is forecast to reach peak flows between May 30 and June 9 with daily peak flows ranging between 6,700 to 9,700 cfs and 9 percent below average to 31 percent above average; The Missouri River near Toston is forecast to reach peak flows between June 11 and June 15 with daily peak flows ranging between 21,250 to 29,250 cfs and 19 to 64 percent above average; and inflow into Clark Canyon Reservoir is forecast to reach peak flows between June 7 and June 10 and daily peak flows ranging from 1,450 to 2,450 cfs.

Streamflow Forecasts

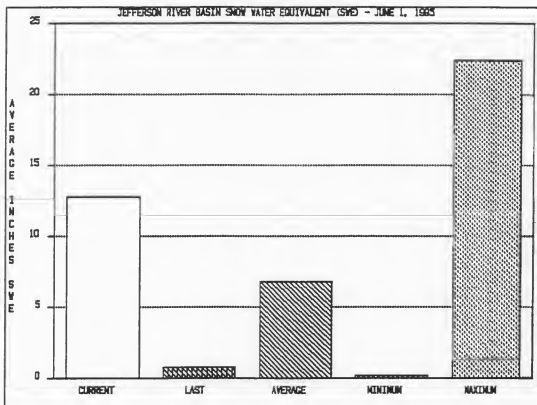
Forecast Pt Forecast Period	← Drier — Future Conditions — Wetter →						30 Yr Avg (1000AF)
	Chance of Exceeding *						
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
RED ROCK RIVER near Monida (2)							
JUN-JUL	51	60	66	169	72	82	39
JUN-SEP	60	72	81	172	90	103	47
BEAVERHEAD RIVER near Grant (2)							
JUN-JUL	65	80	90	173	100	115	52
JUN-SEP	60	99	125	167	152	191	75
BEAVERHEAD RIVER at Barretts (2)							
JUN-JUL	93	109	120	164	131	147	73
JUN-SEP	123	148	164	158	181	205	104
RUBY RIVER near Alder							
JUN-JUL	67	79	87	193	95	107	45
JUN-SEP	82	97	108	177	119	134	61
BIG HOLE RIVER near Melrose							
JUN-JUL	405	445	472	135	500	540	349
JUN-SEP	465	510	542	133	575	620	406
BOULDER RIVER near Boulder							
JUN-JUL	33	41	46	115	51	59	40
JUN-SEP	35	45	52	113	59	69	46
WILLOW CREEK near Harrison							
JUN-JUL	14.2	17.5	19.8	183	22	25	10.8
JUN-SEP	15.0	19.8	23	177	26	31	13.0
JEFFERSON RIVER near Three Forks (2)							
JUN-JUL	625	700	755	164	810	885	459
JUN-SEP	715	825	900	163	975	1080	551

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

Surface Water Supply Index (SWSI) was +3.0 for the Jefferson River; +3.4 for the Beaverhead River; +3.5 for the Ruby River; +3.0 for the Big Hole River; and +1.6 for the Boulder River.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1975-1995, OCCURRED IN WATER YEAR 1987.

MAXIMUM SNOW WATER EQUIVALENT, 1975-1995, OCCURRED IN WATER YEAR 1975.

Snowpack conditions in the Madison River Basin were well above average. Snow water content was 95 percent above average and 1656 percent above last year. Snow water content in the Upper Madison again set a new record, passing that established in 1974.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Percent of Average
MADISON above HEBGEN LAKE	3	1143	212
MADISON below HEBGEN LAKE	6	2176	187
MADISON RIVER BASIN	9	1656	195

Mountain precipitation during May, was 5 percent above average and 24 percent above last year. Water year precipitation, beginning October 1, 1994, was 28 percent above average and 73 percent above last year.

Reservoir storage, on the last day of May, was 16 percent below average and 26 percent below last year. Ennis Lake storage was 1 percent below average and 5 percent below last year and Hebgen Lake storage was 18 percent below average and 28 percent below last year. Hebgen Lake storage is below average because Montana Power has been lowering the lake level to make for a above to well above average snowmelt runoff.

Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	Usable Storage Last Year	***** Average
ENNIS LAKE	41.0	35.4	37.4	35.8
HEBGEN LAKE	377.5	254.0	351.3	309.8

Seasonal streamflows, for the period June through July, are forecast to be 39 percent above average and 159 percent above last years forecasts.

The snowmelt peak flow for the Madison River near Grayling is forecast to reach peak flows between June 6 and June 9 with daily peak flows ranging between 4,350 to 5,300 cfs and 26 to 54 percent above average.

Streamflow Forecasts

Forecast Pt Forecast Period	<— Drier — Future Conditions — Wetter —>					30 Yr Avg (1000AF)
	Chance of Exceeding *					
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)	
MADISON RIVER near Grayling (2)						
JUN-JUL	250	265	275	138	285	200
JUN-SEP	365	385	403	131	420	307

Streamflow Forecasts

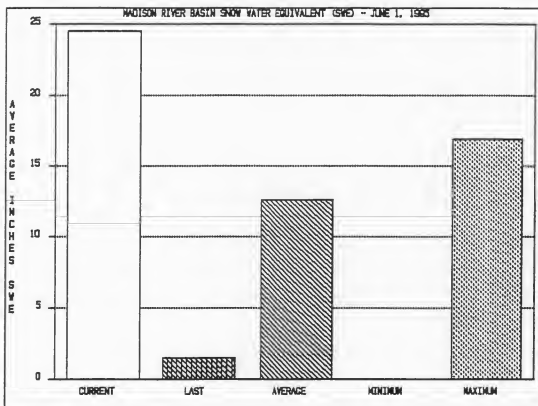
Forecast Pt Forecast Period	← — Drier — Future Conditions — Wetter — →					30 Yr Avg (1000AF)
	Chance of Exceeding *					
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)	
MADISON RIVER near McAllister (2)						
JUN-JUL	465	495	514	139	535	565
JUN-SEP	630	670	695	129	720	760

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

Surface Water Supply Index (SWSI) was +3.4 for the Madison River.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1972-1995, OCCURRED IN WATER YEAR 1992.

MAXIMUM SNOW WATER EQUIVALENT, 1972-1995, OCCURRED THIS MONTH, EXCEEDING THAT SET PREVIOUSLY IN WATER YEAR 1974.

GALLATIN RIVER BASIN as of June 1, 1995

Snowpack conditions in the Gallatin River Basin were well above average. Snow water content was 32 percent above average and 1565 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Percent of Average
UPPER GALLATIN	3	1121	156
HYALITE	2	3362	113
BRIDGER	2	0	101
GALLATIN RIVER BASIN	7	1665	132

Mountain precipitation during May, was 14 percent below average and 29 percent above last year. Water year precipitation, beginning October 1, 1994, was 9 percent above average and 55 percent above last year.

Middle Creek storage, on the last day of May, was 7 percent above average and 26 percent below last year. Note: Middle Creek storage was increased by 2,200 acre-feet during the fall of 1994, therefore the percent of average is reflecting the new capacity with averages prior to the additional storage.

Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	Usable Storage Last Year	***** Average
MIDDLE CREEK	10.2	7.5	10.2	7.0

Seasonal streamflows, for the period June through July, are forecast to be 25 percent above average and 133 percent above last years forecasts.

The snowmelt peak flow for the Gallatin River near Gallatin Gateway should occur between June 9 and June 17 and range between 5,350 and 6,700 cfs and 3 to 29 percent above average and for the Gallatin River near Logan should occur between June 10 and June 18 and range between 5,200 and 7,100 cfs and 2 percent below average to 34 percent above average.

Streamflow Forecasts

	<— Drier — Future Conditions — Wetter —>						
Forecast Pt	Chance of Exceeding *						
Forecast	90%	70%	50% (Most Prob)	30%	10%	30 Yr Avg	
Period	(1000AF)	(1000AF)	(1000AF) (% AVG.)	(1000AF)	(1000AF)	(1000AF)	
GALLATIN RIVER near Gateway							
JUN-JUL	325	345	361	123	375	395	294
JUN-SEP	400	425	443	119	460	485	371

Streamflow Forecasts

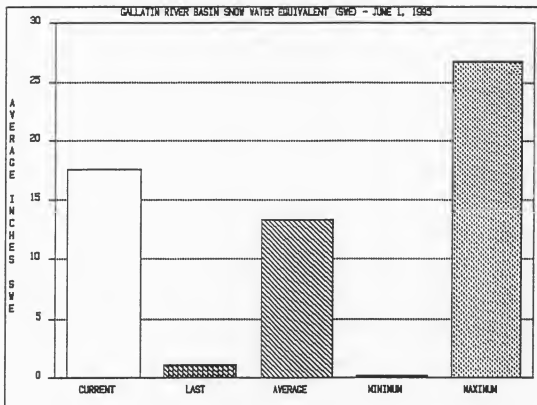
Forecast Pt Forecast Period	← Drier — Future Conditions — Wetter →						30 Yr Avg (1000AF)
	Chance of Exceeding *						
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
E & W FK HYALITE CREEK near Bozeman							
JUN-JUL	14.0	16.0	17.4	109	18.8	20.8	16.0
JUN-SEP	24.9	22.6	21.0	109	22.6	24.9	19.3
HYALITE CREEK near Bozeman (2)							
JUN-JUL	18.0	22	24	109	26	30	22
JUN-SEP	23	27	30	107	33	37	28
GALLATIN RIVER at Logan (2)							
JUN-JUL	290	340	372	130	405	455	287
JUN-SEP	370	425	461	125	500	555	370

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

Surface Water Supply Index (SWSI) was +2.4 for the Gallatin River.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1963-1995, OCCURRED IN WATER YEAR 1987.

MAXIMUM SNOW WATER EQUIVALENT, 1963-1995, OCCURRED IN WATER YEAR 1975.

MISSOURI MAINSTEM RIVER BASIN as of June 1, 1995

Snowpack conditions in the Missouri Mainstem River Basin were above average. Snow water content was 12 percent above average and 612 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Percent of Average
HEADWATERS MAINSTEM	5	1827	131
SUN-TETON-MARIAS BASINS	6	363	98
SMITH-JUDITH-MUSSELSHELL	6	4167	143
MAINSTEM ab FORT PECK RES	16	712	114
MILK	4	0	0
MISSOURI MAINSTEM BASIN	20	712	112

Precipitation during May, was 23 percent above average and 72 percent above last year. Water year precipitation, beginning October 1, 1994, was 1 percent below average and 19 percent above last year.

Reservoir storage, on the last day of May, was 8 percent below average and 10 percent below last year. Canyon Ferry Lake storage was 9 percent below average and 11 percent below last year; Helena Valley storage was 16 percent above average and 4 percent below last year; Lake Helena storage was 8 percent above average and 2 percent above last year; Hauser & Helena storage was 4 percent above average and 1 percent above last year; Holter Lake storage was 3 percent above average and the same as last year; and Fort Peck Lake storage was 1 percent below average and 4 percent below last year.

Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	Usable Storage Last Year	***** Average
CANYON FERRY LAKE	2043.0	1504.0	1697.0	1659.0
HELENA VALLEY	9.2	8.5	8.9	7.3
LAKE HELENA	10.4	10.9	10.7	10.1
HAUSER & HELENA	61.9	63.1	62.5	60.9
HOLTER LAKE	81.9	80.5	80.9	78.0
FORT PECK LAKE (MAF)	18.9	15.4	16.0	15.5

Seasonal streamflows, for the period June through July, are forecast to be 28 percent above average and 145 percent above last year.

The snowmelt peak flow for the Missouri River near Toston should occur between June 10 and June 16 and range from 21,250 to 29,250 cfs and 19 to 64 percent above average.

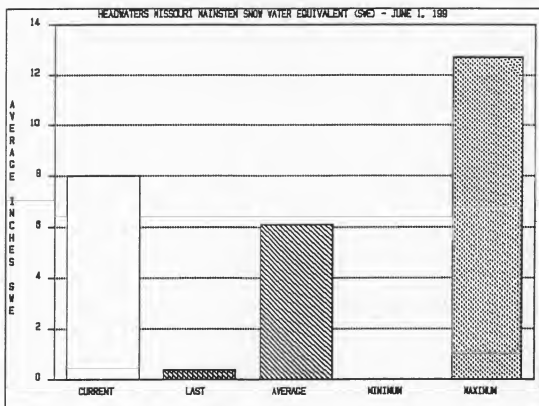
Streamflow Forecasts

Forecast Pt Forecast Period	← Drier — Future Conditions — Wetter →					30 Yr Avg (1000AF)	
	Chance of Exceeding *						
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
MISSOURI RIVER at Toston (2)							
JUN-JUL	1410	1550	1645	147	1740	1880	1120
JUN-SEP	1760	1940	2056	141	2180	2350	1461
PRICKLY PEAR CREEK near Clancy							
JUN-JUL	8.5	12.6	15.4	128	18.2	22	12.0
JUN-SEP	11.4	16.5	20	127	24	29	15.8
SUN RIVER at Gibson Dam (2)							
JUN-JUL	245	285	312	111	340	380	281
JUN-SEP	295	335	363	110	390	435	329
MISSOURI RIVER at Fort Benton (2)							
JUN-JUL	1520	1870	2105	126	2340	2690	1671
MARIAS RIVER near Shelby (2)							
JUN-JUL	153	215	260	110	305	365	236
JUN-SEP	205	270	309	112	350	410	277
MISSOURI RIVER at Virgelle (2)							
JUN-JUL	1450	2010	2395	123	2780	3340	1942
JUN-SEP	2050	2660	3065	120	3470	4080	2564
MISSOURI RIVER near Landusky (2)							
JUN-JUL	1590	2180	2585	123	2990	3590	2109
JUN-SEP	2350	2920	3310	119	3700	4270	2792
MISSOURI RIVER below Fort Peck (2)							
JUN-JUL	1570	2220	2665	129	3110	3760	2072
JUN-SEP	2330	2940	3345	134	3750	4360	2490
LAKE SAKAKAWEA Inflow (2)							
JUN-JUL	6540	7300	7815	141	8330	9090	5540
JUN-SEP	8060	9040	9715	139	10400	11400	6989

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.
The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

Surface Water Supply Index (SWSI) was +3.0 for the Missouri River above Canyon Ferry; +2.4 for the Missouri River below Canyon Ferry; +1.5 for the Missouri River above Ft. Peck; and +0.6 for the Missouri River below Ft. Peck.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1979-1995, OCCURRED IN WATER YEAR 1985 & 1992.

MAXIMUM SNOW WATER EQUIVALENT, 1979-1995, OCCURRED IN WATER YEAR 1982.

SMITH-JUDITH-MUSSELSHELL RIVER BASINS as of June 1, 1995

Snowpack conditions in the Smith-Judith-Musselshell River Basins were well above average. Snow water content was 43 percent above average and 4067 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Percent of Average
SMITH	4	4167	148
JUDITH	3	2089	119
MUSSELSHELL	1	0	0
SMITH-JUDITH-MUSSELSHELL	6	4167	143

Precipitation during May, was 12 percent above average and 102 percent above last year. Water year precipitation, beginning October 1, 1994, was 1 percent above average and 17 percent above last year.

Reservoir storage, on the last day of May, was 19 percent above average and 5 percent below last year. Smith River storage was 10 percent below average and 18 percent below last year; Newlan storage was 19 percent above average and 10 percent below last year; Bair storage was 3 percent below average and 14 percent below last year; Martinsdale storage was 14 percent above average and 17 percent below last year; and Deadman's Basin was 30 percent above average and 2 percent above last year.

SMITH-JUDITH-MUSSELSHELL RIVER BASINS
Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	Usable Storage Last Year	***** Average
SMITH RIVER	10.6	9.4	11.5	10.5
NEWLAN CREEK	12.4	11.4	12.6	9.6
BAIR	7.0	6.0	7.0	6.2
MARTINSDALE	23.1	19.6	23.6	17.2
DEADMAN'S BASIN	72.2	71.4	69.9	55.1

Seasonal streamflows, for the period June through July, are forecast to be 11 percent above average and 55 percent above last years forecasts.

Streamflow Forecasts

	← Drier — Future Conditions — Wetter →					
Forecast Pt	Chance of Exceeding *					
Forecast	90%	70%	50% (Most Prob)	30%	10%	30 Yr Avg
Period	(1000AF)	(1000AF)	(1000AF) (% AVG.)	(1000AF)	(1000AF)	(1000AF)
SMITH RIVER near Fort Logan						
JUN-JUL	32	37	40	111	43	48
JUN-SEP	45	50	53	113	56	61
						36
						47

Streamflow Forecasts

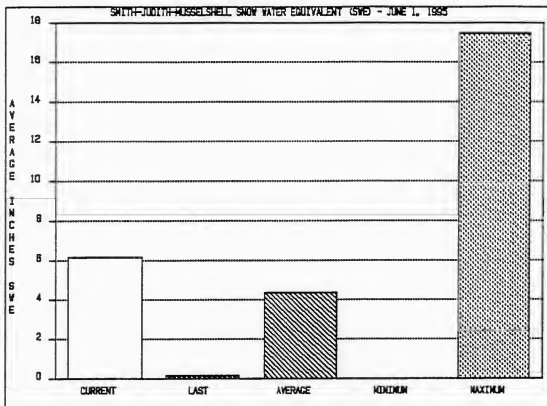
Forecast Pt Forecast Period	<— Drier — Future Conditions — Wetter —>					30 Yr Avg (1000AF)	
	Chance of Exceeding *						
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
SHEEP CREEK nr White Sulphur Springs							
JUN-JUL	7.1	9.5	11.1	111	12.7	15.1	10.0
JUN-SEP	9.6	12.3	14.1	109	15.9	18.6	12.9
NF MUSSELSHELL near Delpine							
JUN-JUL	1.6	2.2	2.7	117	3.2	3.8	2.3
JUN-SEP	2.2	3.1	3.7	119	4.3	5.2	3.1
SF MUSSELSHELL abv Martinsdale							
JUN-JUL	12.0	22	29	112	36	46	26
JUN-SEP	13.0	24	32	110	40	51	29

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

Surface Water Supply Index (SWSI) was 0.0 for the Smith River and +2.8 for the Musselshell River.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1965-1995, OCCURRED IN WATER YEAR 1992.

MAXIMUM SNOW WATER EQUIVALENT, 1965-1995, OCCURRED IN WATER YEAR 1970.

SUN-TETON-MARIAS RIVER BASINS as of June 1, 1995

Snowpack conditions in the Sun-Teton-Marias River Basins were near average. Snow water content was 2 percent below average and 263 percent above last year.

Watershed Snowpack Analysis

Watershed		Number of Data Sites	This Year as Percent of Last Year	Percent of Average
SUN		2	0	95
TETON		3	9500	90
MARIAS		3	270	99
SUN-TETON-MARIAS BASINS	4	6	363	98

Mountain and valley precipitation for May, was 70 percent above average and 71 percent above last year. Water year precipitation, beginning October 1, 1994, was 4 percent above average and 21 percent above last year.

Reservoir storage, on the last day of May, was 17 percent above average and 7 percent below last year. Gibson storage was 10 percent above average and 7 percent above last year; Pishkun storage was 2 percent below average and 4 percent above last year; Willow Creek storage was 7 percent above average and 1 percent below last year; Lower Two Medicine Lake storage was 14 percent above average and 5 percent below last year; Four Horns Lake storage was 7 percent above average and 5 percent above last year; Swift storage was 13 percent below average and 28 percent below last year; Lake Frances storage was 11 percent above average and 7 percent below last year; and Lake Elwell (Tiber) storage was 22 percent above average and 9 percent below last year.

Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	Usable Storage Last Year	***** Average
GIBSON	99.1	99.0	92.9	90.1
PISHKUN	32.0	29.6	28.4	30.1
WILLOW CREEK	32.2	30.6	31.0	28.5
LOWER TWO MEDICINE LAKE	11.9	12.6	13.2	11.1
FOUR HORNS LAKE	19.2	13.9	13.2	13.0
SWIFT	30.0	21.6	30.0	24.8
LAKE FRANCES	112.0	96.7	104.1	87.4
LAKE ELWELL (TIBER)	1347.0	841.0	924.5	690.8

Seasonal streamflows, for the period June through July, are forecast to be 12 percent above average and 52 percent above last years forecasts.

Streamflow Forecasts

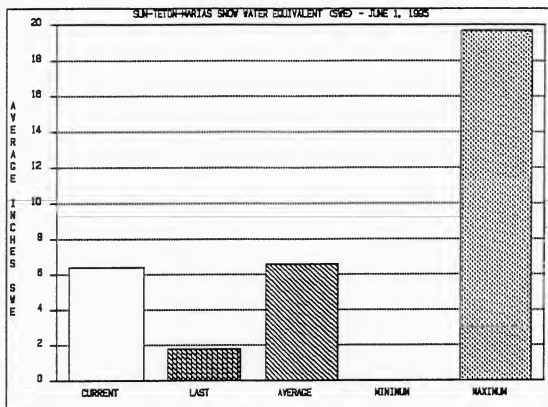
Forecast Pt Forecast Period	← Drier — Future Conditions — Wetter →					30 Yr Avg (1000AF)	
	Chance of Exceeding *						
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
SUN RIVER at Gibson Dam (2)							
JUN-JUL	245	285	312	111	340	380	281
JUN-SEP	295	335	363	110	390	435	329
TWO MEDICINE RIVER near Browning (2)							
JUN-JUL	56	94	120	114	146	184	105
JUN-SEP	67	106	133	114	160	199	117
BADGER CREEK near Browning (2)							
JUN-JUL	42	58	68	119	78	94	57
JUN-SEP	60	76	87	118	98	114	74
SWIFT RESERVOIR Inflow near Dupuyer							
JUN-JUL	28	39	46	121	53	64	38
JUN-SEP	39	51	59	118	67	79	50
DUPUYER CREEK near Valier							
JUN-JUL	1.5	4.4	8.2	108	12.0	17.6	7.6
JUN-SEP	2.4	6.0	10.2	107	14.4	21	9.5
CUT BANK CREEK at Cut Bank							
JUN-JUL	36	45	51	109	57	66	47
JUN-SEP	45	54	60	107	66	75	56
MARIAS RIVER near Shelby (2)							
JUN-JUL	153	215	260	110	305	365	236
JUN-SEP	205	270	309	112	350	410	277

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

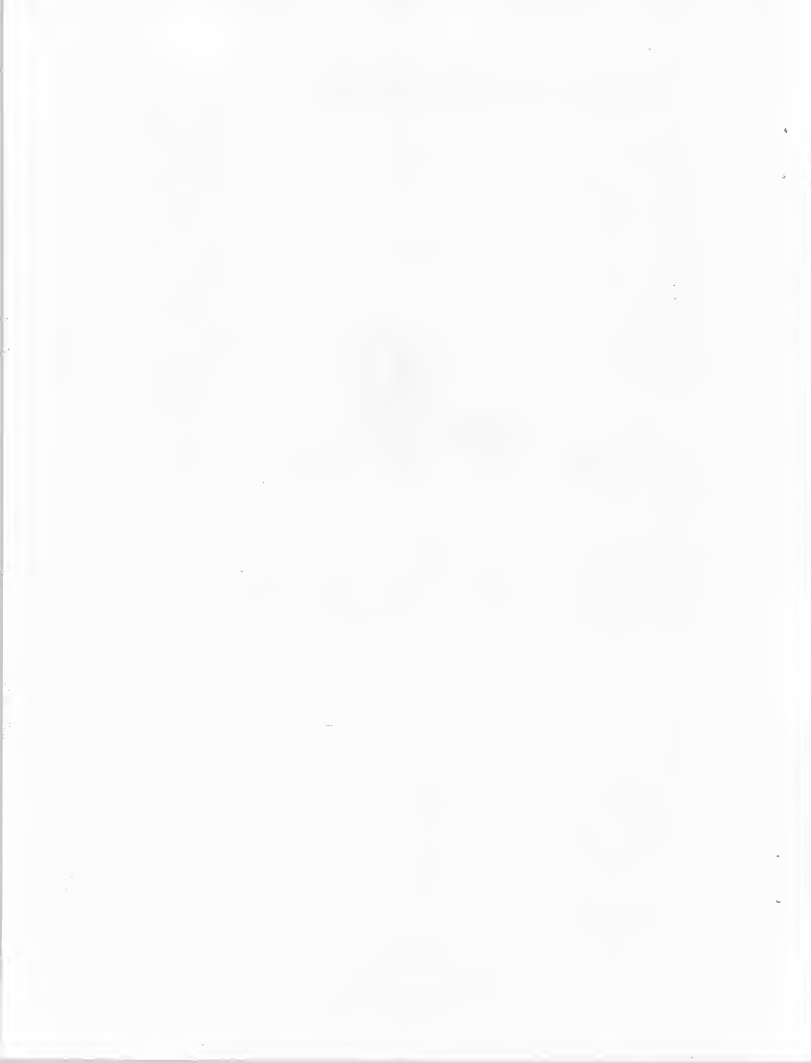
Surface Water Supply Index (SWSI) was +2.0 for the Sun River; +0.2 for the Teton River; +1.3 for the Marias River; and +0.9 for the Birch/Dupuyer Creeks.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1975-1995, OCCURRED IN WATER YEAR 1992.

MAXIMUM SNOW WATER EQUIVALENT, 1975-1995, OCCURRED IN WATER YEAR 1982.



ST. MARY and MILK RIVER BASINS as of June 1, 1995

Snowpack conditions in the St. Mary River Basin was above average and in the Milk River Basin were near average. Snow water content in the St. Mary was 14 percent above average and 70 percent above last year. Snow water content in the Milk was 0 percent of average and the same as last year. The Bearpaw Mountains on average should only have 0.9 inches of snow water remaining.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of	
		Last Year	Average
ST. MARY RIVER BASIN	1	170	114
BEARPAW MOUNTAINS	4	0	0
CYPRESS HILLS, CANADA	0	0	0
MILK RIVER BASIN	4	0	0
ST. MARY and MILK BASINS	5	170	111

Mountain and valley precipitation for May, was 12 percent below average and 22 percent above last year. Water year precipitation, beginning October 1, 1994, was 5 percent below average and 12 percent above last year.

Reservoir storage, on the last day of May, was 11 percent below average and 33 percent below last year. Lake Sherburne storage was 20 percent above average and 36 percent below last year; Fresno storage was 17 percent below average and 27 percent below last year; Beaver Creek storage was 100 percent of average and 15 percent below last year; and Nelson storage was 24 percent below average and 42 percent below last year.

Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** Usable Storage *****		
		This Year	Last Year	Average
LAKE SHERBURNE	64.3	38.4	59.9	32.0
FRESNO	127.0	74.2	101.3	89.1
BEAVER CREEK	3.5	2.9	3.4	2.9
NELSON	66.8	32.2	55.8	42.6

Seasonal streamflows for the St. Mary Basin, for the period June through July, are forecast to be 9 percent above average and 10 percent above last years forecasts. Seasonal streamflows for the Milk River Basin, for the period June through July, are forecast to be 32 percent above average and 611 percent above last years forecasts.

Streamflow Forecasts

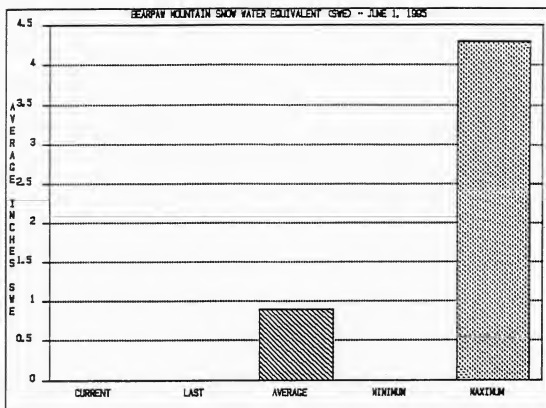
Forecast Pt Forecast Period	← Drier — Future Conditions — Wetter →						30 Yr Avg (1000AF)
	Chance of Exceeding *						
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
SWIFTCURRENT CREEK at Sherburne (2)							
JUN-JUL	60	67	71	111	75	82	64
JUN-SEP	76	84	89	110	94	102	81
ST. MARY RIVER near Babb							
JUN-JUL	265	275	285	109	295	305	261
JUN-SEP	320	340	355	108	370	390	329
ST. MARY RIVER at International Boundary (2)							
JUN-JUL	234	256	271	91	286	308	298
JUN-SEP	300	330	350	93	370	400	376
MILK RIVER at Western Crossing							
JUN-JUL	10.8	14.5	17.0	142	19.5	23	12.0
JUN-SEP	12.3	16.9	20	133	23	28	15.0
MILK RIVER at Eastern Crossing (2)							
JUN-JUL	8.4	15.3	20	125	25	32	16.0
JUN-SEP	1.0	16.0	26	108	36	51	24
BEAVER CREEK near Havre							
JUN-JUL	1.0	2.4	3.3	83	4.2	5.6	4.0

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

Surface Water Supply Index (SWSI) was -0.8 for the Milk River.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT 1980-1995, OCCURRED IN WATER YEARS
1980, 1981, 1986, 1987, 1988 & 1992.

MAXIMUM SNOW WATER EQUIVALENT, 1980-1995, OCCURRED IN WATER YEAR 1982.

UPPER YELLOWSTONE RIVER BASIN as of June 1, 1995

Snowpack conditions in the Upper Yellowstone River Basin were well above average. Snow water content was 36 percent above average and 1448 percent above last year.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Last Year	Percent of Average
YELLOWSTONE ab LIVINGSTON SHIELDS	11	1965	133
	4	0	123
BOULDER-STILLWATER	3	1126	132
CLARK'S FORK-ROCK CREEK	9	1211	132
UPPER YELLOWSTONE BASIN	23	1548	136

Precipitation for May, was 19 percent below average and 28 percent above last year. Water year precipitation, beginning October 1, 1994, was 9 percent above average and 42 percent above last year.

Reservoir storage, on the last day of May, was 1 percent below average and 23 percent below last year. Mystic Lake storage was 80 percent below average and 89 percent below last year and Cooney storage was 21 percent above average and 5 percent above last year.

Seasonal streamflows, for the period June through July, are forecast to be 12 percent above average and 137 percent above last years forecasts.

Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	Usable Storage Last Year	***** Average
MYSTIC LAKE	21.0	1.1	9.7	5.5
COONEY	27.4	24.1	22.9	20.0

The snowmelt peak flow for the Yellowstone River at Corwin Springs should occur between June 15 and June 18 and range between 15,000 to 20,750 cfs and 10 percent below average to 23 percent above average; the Yellowstone River at Livingston between June 15 to June 18 and range between 17,500 to 23,500 cfs and 12 percent below average to 19 percent above average; the Boulder River near Big Timber between June 15 and June 18 and range between 4,400 to 6,400 cfs and 13 percent below average to 27 percent above average; the Stillwater River near Absarokee should be between June 15 to June 18 and range between 5,500 to 8,300 cfs and 13 percent below average to 32 percent above average; the Clarks Fork River near Belfry between June 15 to June 18 and range from 6,500 to 9,200 cfs and 13 percent below average to 23 percent above average; and the Yellowstone River at Billings between June 16 to June 19 and range from 35,000 to 49,500 cfs and 14 percent below average to 21 percent above average.

Streamflow Forecasts

Forecast Pt Forecast Period	← Drier — Future Conditions — Wetter →					30 Yr Avg (1000AF)	
	Chance of Exceeding *						
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
YELLOWSTONE at Lake Outlet							
JUN-JUL	465	510	540	114	570	615	472
JUN-SEP	685	740	777	112	815	870	691
YELLOWSTONE RIVER at Corwin Springs							
JUN-JUL	1200	1270	1322	114	1370	1440	1156
JUN-SEP	1510	1600	1669	112	1730	1830	1484
YELLOWSTONE RIVER near Livingston							
JUN-JUL	1380	1480	1541	115	1610	1700	1335
JUN-SEP	1750	1870	1952	113	2030	2150	1721
SHIELDS RIVER near Livingston							
JUN-JUL	65	82	93	121	104	121	77
JUN-SEP	79	98	111	117	124	143	95
BOULDER RIVER at Big Timber							
JUN-JUL	230	250	266	105	280	305	253
JUN-SEP	245	275	292	104	310	340	282
WEST ROSEBUD CREEK near Roscoe (2)							
JUN-JUL	45	50	53	104	57	62	51
JUN-SEP	60	66	70	101	74	80	69
STILLWATER RIVER nr Absarokee (2)							
JUN-JUL	370	400	421	111	440	470	380
JUN-SEP	445	490	518	109	545	590	475
CLARKS FORK RIVER near Belfry							
JUN-JUL	370	410	437	111	465	505	395
JUN-SEP	420	470	500	110	530	580	453
RED LODGE CREEK blw Cooney Res (2)							
JUN-JUL	24	30	34	142	38	45	24
JUN-SEP	32	42	49	140	56	66	35

Streamflow Forecasts

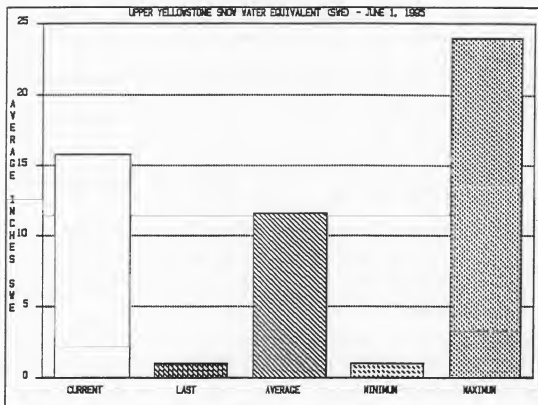
Forecast Pt Forecast Period	<— Drier — Future Conditions — Wetter —>					30 Yr Avg (1000AF)
	Chance of Exceeding *					
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)	
YELLOWSTONE RIVER at Billings (2)						
JUN-JUL	2310	2580	2770	110	2960	3230
JUN-SEP	2820	3160	3400	108	3640	3980
						2525
						3159

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

Surface Water Supply Index (SWSI) was +0.4 for the Yellowstone River above Bighorn River; +0.5 for the Yellowstone River above Livingston; +1.2 for the Shields River; 0.0 for the Boulder River; +0.7 for the Stillwater River; +1.8 for the Rock/Red Lodge Creeks; and +0.9 for the Clarks Fork River.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1974-1995, OCCURRED IN WATER YEAR 1987.

MAXIMUM SNOW WATER EQUIVALENT, 1974-1995, OCCURRED IN WATER YEAR 1974.

LOWER YELLOWSTONE RIVER BASIN as of June 1, 1995

Snowpack conditions in the Lower Yellowstone River Basin were well above average. Snow water content was 142 percent above average and 2749 percent above last year. This snow water content has set a new record for the basin, exceeding that of 1983.

Watershed Snowpack Analysis

Watershed	Number of Data Sites	This Year as Percent of Last Year	Percent of Average
WIND RIVER (Wyoming)	12	5764	262
SHOSHONE RIVER (Wyoming)	6	1411	166
BIGHORN RIVER (Wyoming)	16	1907	212
LITTLE BIGHORN (WYOMING)	2	595	157
TONGUE RIVER (Wyoming)	5	0	300
POWDER RIVER (Wyoming)	6	0	403
LOWER YELLOWSTONE BASIN	30	2849	242

Precipitation for May, was 66 percent above average and 269 percent above last year. Water year precipitation, beginning October 1, 1994, was 29 percent above average and 53 percent above last year.

Reservoir storage, on the last day of May, was 7 percent below average and 8 percent below last year. Bighorn Lake storage was 5 percent below average and 6 percent below last year and the Tongue River storage was 7 percent below average and 8 percent below last year.

Reservoir Storage (1000AF) End of May

Reservoir	Usable Capacity	***** This Year	Usable Storage Last Year	***** Average
BIGHORN LAKE	1356.0	809.8	859.6	855.6
TONGUE RIVER	68.0	27.1	45.7	48.2

Seasonal streamflows, for the period June through July, are forecast to be 36 percent above average and 162 percent above last years forecasts.

Streamflow Forecasts

Forecast Pt Forecast Period	← Drier — Future Conditions — Wetter →					30 Yr Avg (1000AF)	
	Chance of Exceeding *						
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
YELLOWSTONE RIVER at Billings (2)							
JUN-JUL	2310	2580	2770	110	2960	3230	2525
JUN-SEP	2820	3160	3400	108	3640	3980	3159
BIGHORN RIVER nr St. Xavier (2)							
JUN-JUL	1650	1800	1910	167	2020	2170	1141
JUN-SEP	1900	2100	2240	172	2380	2580	1306

Streamflow Forecasts

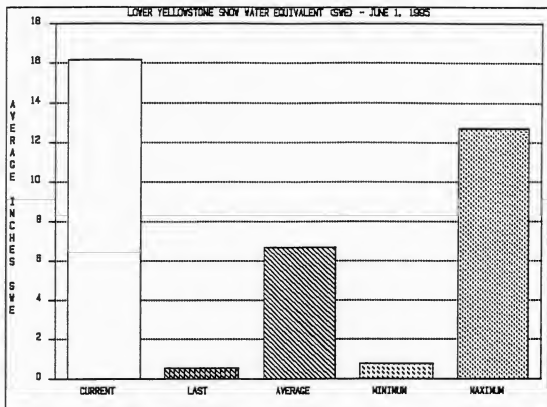
Forecast Pt Forecast Period	<— Drier — Future Conditions — Wetter —>					30 Yr Avg (1000AF)	
	Chance of Exceeding *						
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
LITTLE BIGHORN RIVER nr Hardin							
JUN-JUL	69	84	94	125	104	119	75
JUN-SEP	81	101	114	124	127	147	92
TONGUE RIVER stateline nr Decker (2)							
JUN-JUL	159	183	200	148	215	240	135
JUN-SEP	178	210	228	142	250	280	161
YELLOWSTONE RIVER at Miles City (2)							
JUN-JUL	3900	4540	4980	133	5420	6060	3753
JUN-SEP	4810	5630	6185	134	6740	7560	4631
POWDER RIVER at Moorhead							
JUN-JUL	109	131	145	125	159	181	116
JUN-SEP	113	145	166	120	188	220	138
POWDER RIVER near Locate							
JUN-JUL	101	137	162	117	187	225	138
JUN-SEP	103	152	185	114	220	265	162
YELLOWSTONE RIVER nr Sidney (2)							
JUN-JUL	3580	4520	5150	131	5780	6720	3928
JUN-SEP	4450	5590	6370	134	7150	8290	4763

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

Surface Water Supply Index (SWSI) was +0.9 for the Yellowstone River below Bighorn River; +1.3 for the Bighorn River below Bighorn Lake; +2.1 for the Little Bighorn River; +2.5 for the Tongue River; and +1.8 for the Powder River.



AVERAGE IS FOR THE PERIOD 1961-1990.

MINIMUM SNOW WATER EQUIVALENT, 1979-1995, OCCURRED IN WATER YEAR 1987.

MAXIMUM SNOW WATER EQUIVALENT, 1979-1995, OCCURRED IN WATER YEAR 1983.







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Basin Outlook Report
Natural Resources Conservation Service
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